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EXAMINER	
VAN DOREN, BETH	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/849,783	NEAL ET AL.	
	Examiner	Art Unit	
	Beth Van Doren	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a Final office action in response to the interview held with Kang Lim on 10/22/07 (see interview summary). Claims 1-17 and 19-27 are pending.

Response to Amendment

2. Applicant's amendments to claim 1 are not sufficient to overcome the 35 USC 101 rejections or the 35 USC 112, second paragraph, rejections set forth in the previous office action. These rejections have been updated to reflect the current amendments.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-4, 9-10, 15, 19-20, and 25-27 are rejected under 35 U.S.C. 101 because it does not recite subject matter within one of the statutory classes. Claim 1 recites a series of engines (i.e. econometric engine, financial model engine, and promotional engine). Engines are portions of programs, and thus the body of claim 1 is construed as software per se. Claims 2-4, 9-10, 15, and 19-20 depend from claim 1 and therefore have the same deficiencies. Computer programs and software are merely a set of instructions capable of being executed by a computer. Without specific language stating that a computer or computer processor is actively executing the computer program/software, computer programs and software are not considered to be statutory processes or machines. Therefore, there must be some functional act performed by a computer or computer element on the software/computer program to impart statutory subject matter.

Therefore, it is respectfully submitted that claims 1-4, 9-10, 15, 19-20, and 25-27 are directed towards non-statutory subject matter.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-4, 9-10, 15, 19-20, and 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites in the preamble a system, while the body of the claim recites a series of engines. It is unclear how a collection of engines, which are portions of computer programs, would amount to a system, since systems require a combination of hardware and software elements. Therefore, it appears that the body of the claim does not match the limitations set forth in the preamble. Clarification is required.

Claims 2-4, 9-10, 15, 19-20, and 25-27 depend from claim 1 and therefore have the same deficiencies. Further, claims 2-4, 9-10, 15, 19-20, and 25-27 recite "The apparatus", but all these claims are dependent from claim 1. There is insufficient antecedent basis for this limitation in the claim, since claim 1 is now a system claim. Correction is required.

Further, claim 27 recites "wherein the sales model created by the econometric engine includes Bayesian Shrinkage modeling". It is not clear in this limitation whether the econometric engine utilizes Bayesian Shrinkage modeling to create the sales model, or if the sales model itself specifically contains Bayesian Shrinkage algorithms. Further, if it is that the

sales model contains Bayesian Shrinkage modeling, it is not clear how this model interacts with the promotional engine. Clarification is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-17, and 19-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham et al. (U.S. 6,029,139) in view of Walser et al. (U.S. 2006/0161504) and in further view of LoPresti ("New SPSS Missing Value Analysis Option").

As per claim 1, Cunningham et al. teaches a computerized system configured to create a promotional event calendar, useful in association with at least one store, the computerized system comprising:

an econometric engine for modeling sales as a function of price to create a sales model, wherein the econometric engine includes base price and promotional considerations (See column 2, lines 65-column 3, line 3, column 5, lines 13-23, column 6, lines 1-20, column 8, lines 1-10, column 10, lines 55-65, which discusses modeling sales using price and sales information);

a financial model engine for modeling costs to create a cost model (See column 5, lines 14-41, column 8, lines 1-12, column 10, lines 55-65, column 11, lines 65-column 12, line 5 and lines 45-52, which discusses modeling costs using cost data);

a promotional engine coupled to the econometric engine, and financial model engine to receive input from the econometric engine and financial model engine, wherein the promotional engine analyzes a plurality of offers, a plurality of promotional events, conditions from at least one manufacturer, and constraints to optimally match offers with promotional events to create a promotional event calendar subject to conditions from the at least one store (See figure 2, column 2, lines 24-31, column 5, lines 13-42 and 59-65, column 11, lines 35-45 and 65-column 12, line 15 and lines 45-52, wherein an engine uses the output of the other engines to analyze and optimize promotional options to match offers and events (i.e. prices with displays, for example) This creates a schedule of events for future promotions. See column 2, lines 50-60, column 3, lines 1-5 and 15, column 10, lines 60-65, and column 12, lines 20-25, wherein conditions (i.e. sales, promotional participation, etc.) at the at least one store associated with a retailer is considered in the modeling of a promotional event. See also column 2, lines 1-5 and 30-45, column 4, lines 60-67, column 6, lines 1-13, and column 10, lines 20-40 and 55-57, which discuss manufacturer conditions and user input constraints).

However, while Cunningham et al. discloses receiving and analyzing constraints from a user, Cunningham et al. does not expressly disclose receiving and analyzing constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint. Further, while Cunningham et al. discloses price and promotional considerations, Cunningham et al. does not expressly disclose an imputed variable generator for imputing base price variable and for imputing promotional variable, and wherein the sales model includes the imputed base price variable and the imputed promotional variable.

Walser et al. discloses receiving and analyzing constraints from the at least one store (See paragraphs 10, 12, 15, 36, 54, 69, and 73-76, wherein constraints are utilized to cause the system to adhere to certain pricing strategies). However, Walser et al. does not expressly disclose that the constraints include a linear constraint and a non-linear constraint and further does not expressly disclose an imputed variable generator for imputing base price variable and for imputing promotional variable, and wherein the sales model includes the imputed base price variable and the imputed promotional variable.

LoPresti discloses an imputed variable generator and imputing variable values in data sets when data is missing (See page 1, sections 1-2, and page 2, sections 1-2, wherein a data set is utilized for a study and missing data is imputed so the missing data can be replaced). However, LoPresti et al. does not expressly disclose receiving and analyzing constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint.

Both Cunningham et al. and Walser et al. disclose using constrained optimization to make decisions concerning a store, pricing, and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Walser et al. specifically discloses constraints related to the store, such as constraints concerning inventory and maximum price reductions. It would have been obvious to one of ordinary skill in the art at the time of the invention to input store constraints in the system of Cunningham et al. as well as explicitly include promotional variables and base price variables in the engines of Cunningham et al. in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as price, volume, or profit, by using

constraints concerning the store that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation.

Further, as stated above, both Cunningham et al. and Walser et al. discloses using constrained optimization. It is old and well known in operations research that constraints are used to specify restrictions on values of variables and would take the form of linear or non-linear equalities or inequalities in order to best represent the situations that limit the values of variables in the constrained optimization problem. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use linear and non-linear constraints in order to more accurately optimize promotional options by matching offers and events based on accurately represented restrictions occurring at the store.

Finally, Cunningham et al. discloses using constrained optimization to make decisions concerning a store, pricing, and promotions and interfacing with a user to set goals and constraints and elicit promotional cost information for the system. LoPresti specifically discloses using imputation to fill in missing values in a data set so that the data can be used. It would have been obvious to one of ordinary skill in the art at the time of the invention to use imputation on missing values in order to create a more useful data set for the study. See page 1, section 1, of LoPresti.

As per claim 2, Cunningham et al. discloses wherein the promotional engine further comprises a temporary price reduction optimizing engine for optimizing temporary price reduction prices after the promotional events and offers have been selected (See column 8, lines 1-11, column 11, lines 35-42 and line 65-column 12, line 12 and lines 45-55, wherein a temporary price reduction is considered by the promotional engine).

As per claim 3, Cunningham et al. teaches a promotional engine and outputting the optimized selection, as well as a client/personal computer (See figure 1, column 1, line 64-column 2, line 7, column 5, lines 14-45, column 11, lines 65-column 12, line 5 and lines 45-55). However, Cunningham et al. does not expressly discloses, nor does Walser et al., a support tool per se connected to the promotional engine that receives the promotional event calendar from the promotional engine and provides a user interface with the promotional event calendar to a client.

Cunningham discloses a system with client/server architecture and models that optimize promotional planning to create the output of promotional events and offers. Using a user interface to more efficiently display output to a user (or client) of a system is old and well known in the computer arts. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to display the output and optimized results to the user of the system in order to more efficiently communicate the results to the user for whom the analysis was performed. See column 2, lines 24-31, which discusses creating a plan to better meet the user's goals and figure 1 and column 1, lines 64-column 2, line 7, which discuss a personal computer connected to the system.

As per claim 4, Cunningham et al. discloses wherein the promotional engine calculates the value of offers and the value of promotional events by using the financial model and sales model and selects combinations of the offers and the promotional events (See column 2, lines 24-31, column 5, lines 13-42 and 59-65, column 11, lines 35-45 and 65-column 12, line 15 and lines 45-52, wherein the promotion engine uses outputs of the financial and sales models to determine offer and promotion events).

As per claim 5, Cunningham et al. discloses a computer-implemented method for creating a promotional event calendar, comprising:

creating a sales model, wherein price and promotional considerations are included (See column 2, lines 65-column 3, line 3, column 5, lines 13-23, column 6, lines 1-20, column 8, lines 1-10, column 10, lines 55-65, which discuss a sales model created in the system that considers sales data);

creating a cost model (See column 2, lines 45-52, column 5, lines 13-20 and 59-column 6, line 25, wherein a cost model is created in the system and considers cost data);

determining conditions from at least one manufacturer (See column 4, lines 60-67, column 6, lines 1-13, and column 10, lines 20-40 and 55-57, which discuss manufacturer conditions);

determining user input constraints (See column 2, lines 1-5 and 30-45, which discuss user input constraints);

determining the value of offers using the sales model and cost model (See column 5, lines 14-41, column 8, lines 1-12, column 10, lines 55-65, column 11, lines 65-column 12, line 5 and lines 45-52, which discuss determining the value of offers using the models);

determining the value of promotional events using the sales model and cost model (See column 5, lines 25-41, column 6, lines 10-12, column 11, lines 65-column 12, line 5 and lines 45-52, which discusses the value of promotional events); and

selecting combinations of the offers and promotional events based on the determined values to create a promotional event calendar subject to the conditions from the at least one manufacturer and constraints from the user (See column 1, lines 59-63, column 2, lines 24-31,

column 5, lines 25-41, column 11, lines 65-column 12, line 5 and lines 45-52, wherein the combination of offers and promotional events are selected based on determined values. See column 2, lines 50-60, column 3, lines 1-5 and 15, column 10, lines 60-65, and column 12, lines 20-25, wherein conditions related to a store are considered in the modeling of a promotional event. See also column 2, lines 1-5 and 30-45, column 4, lines 60-67, column 6, lines 1-13, and column 10, lines 20-40 and 55-57, which discuss manufacturer conditions and user input constraints).

However, while Cunningham et al. discloses receiving and analyzing constraints from a user, Cunningham et al. does not expressly disclose receiving and analyzing constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint. Further, while Cunningham et al. discloses price and promotional considerations, Cunningham et al. does not expressly disclose an imputed base price variable and imputed promotional variable.

However, while Cunningham et al. discloses receiving and analyzing constraints from a user, Cunningham et al. does not expressly disclose receiving and analyzing constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint. Further, while Cunningham et al. discloses price and promotional considerations, Cunningham et al. does not expressly disclose an imputed base price variable and imputed promotional variable.

Walser et al. discloses receiving and analyzing constraints from the at least one store (See paragraphs 10, 12, 15, 36, 54, 69, and 73-76, wherein constraints are utilized to cause the system to adhere to certain pricing strategies). However, Walser et al. does not expressly disclose that the constraints include a linear constraint and a non-linear constraint and further does not expressly disclose an imputed variable generator for imputing base price variable and for

imputing promotional variable, and wherein the sales model includes the imputed base price variable and the imputed promotional variable.

LoPresti discloses imputing variable values in data sets when data is missing (See page 1, sections 1-2, and page 2, sections 1-2, wherein a data set is utilized for a study and missing data is imputed so the missing data can be replaced). However, LoPresti et al. does not expressly disclose receiving and analyzing constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint.

Both Cunningham et al. and Walser et al. disclose using constrained optimization to make decisions concerning a store, pricing, and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Walser et al. specifically discloses constraints related to the store, such as constraints concerning inventory and maximum price reductions. It would have been obvious to one of ordinary skill in the art at the time of the invention to input store constraints in the system of Cunningham et al. as well as explicitly include promotional variables and base price variables in the engines of Cunningham et al. in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as price, volume, or profit, by using constraints concerning the store that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation.

Further, as stated above, both Cunningham et al. and Walser et al. discloses using constrained optimization. It is old and well known in operations research that constraints are used to specify restrictions on values of variables and would take the form of linear or non-linear equalities or inequalities in order to best represent the situations that limit the values of variables

in the constrained optimization problem. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use linear and non-linear constraints in order to more accurately optimize promotional options by matching offers and events based on accurately represented restrictions occurring at the store.

Finally, Cunningham et al. discloses using constrained optimization to make decisions concerning a store, pricing, and promotions and interfacing with a user to set goals and constraints and elicit promotional cost information for the system. LoPresti specifically discloses using imputation to fill in missing values in a data set so that the data can be used. It would have been obvious to one of ordinary skill in the art at the time of the invention to use imputation on missing values in order to create a more useful data set for the study. See page 1, section 1, of LoPresti.

As per claim 6, Cunningham et al. wherein the creating of the sales model comprises:

creating a plurality of demand groups, wherein each demand group is a set of at least one product and wherein at least one of the demand groups is a set of at least two substitutable products (See column 2, lines 25-35, column 4, line 61-column 5, lines 8, column 6, lines 22-40 and 50-62, which discusses demand groups wherein a demand group is one product or more than one product, such as segment or brand family. A segment is a product type, such as tea bags, wherein teabags of different manufacturers would be substitutes), wherein the creation of the plurality of demand groups includes error detection and correction based on attributes of the plurality of demand groups (See figure 3, column 6, lines 35-46, and column 11, 15-30, wherein when the demand group is formed, data is aggregated and the data is checked for missing values (ie errors), which when found is corrected);

creating a sales model for each demand group (See column 2, lines 25-35, column 4, line 61-column 5, lines 8, column 6, lines 22-40 and 50-62, wherein sales data is obtained and modeled for a demand group); and

creating a market share model for each product in each demand group (See column 2, lines 45-57, column 4, line 61-column 5, line 12, column 6, lines 22-40 and 50-65, wherein a model is created concerning the market of the demand group).

As per claim 7, Cunningham et al. discloses the step of estimating net profit from the selected combination of offers and promotional events using the sales model and cost model (See column 5, lines 30-56, column 6, lines 1-22, wherein the net profit is estimated by using optimization, the sales and cost models).

Claim 8 recites equivalent limitations to claims 5-7 above and is therefore rejected using the same art and rationale applied above.

As per claim 9, Cunningham et al. discloses determining user input constraints (See column 2, lines 1-5 and 30-45, which discuss user input constraints). However, while Cunningham et al. discloses receiving and analyzing constraints from a user and using linear programming, Cunningham et al. does not expressly disclose receiving and analyzing constraints the at least one store.

Walser et al. discloses receiving and analyzing constraints the at least one store (See paragraphs 10, 12, 15, 36, 54, 69, and 73-76, wherein base price and promotional variables are input into the model, and constraints are utilized to cause the system to adhere to certain pricing strategies). However, Walser et al. does not expressly disclose that the constraint is display

space capacity. LoPresti also does not expressly disclose that the constraint is display space capacity.

Cunningham et al. and Walser et al. are combinable for the reasons set forth above with regards to claim 1. Further, both Cunningham et al. and Dulaney et al. disclose using constrained optimization (linear programming) to make decisions concerning a store and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Dulaney et al. specifically discloses constraints related to the store, such as capacity constraints concerning shelves and facings. Examiner takes official notice that display space capacity is an old and well known constraint in the retail industry. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the user input constraints of Cunningham et al. be constraints related to the store, such as display space, in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as price, volume, or profit, by using constraints concerning the store that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation.

As per claim 10, Cunningham et al. discloses determining user input constraints (See column 2, lines 1-5 and 30-45, which discuss user input constraints). However, while Cunningham et al. discloses receiving and analyzing constraints from a user and using linear programming, neither Cunningham et al. nor LoPresit expressly disclose receiving and analyzing constraints the at least one store.

Walser et al. disclose analyzing constraints the at least one store, wherein the constraint includes at least product promotion frequency (See paragraphs 10, 12, 15, 36-8, wherein

constraints are utilized to cause the system to adhere to certain pricing strategies, such a maximum or minimum number of price changes allowed).

Both Cunningham et al. and Walser et al. disclose using constrained optimization to make decisions concerning a store, pricing, and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Walser et al. specifically discloses constraints related to the store, such as constraints concerning inventory and maximum price reductions. It would have been obvious to one of ordinary skill in the art at the time of the invention to input store constraints in the system of Cunningham et al. in order to more efficiently and accurately select the best promotions for the store based on policies that constrain how prices may be set. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation. See also Walser et al., paragraphs 36-8.

Claims 11 and 13 recite equivalent limitations to claim 9 and are therefore rejected using the same art and rationale applied above.

Claims 12 and 14 recite equivalent limitations to claim 10 and are therefore rejected using the same art and rationale applied above.

As per claim 15, Cunningham teaches wherein the matching of offers with promotional events involves solving an optimization problem (See column 5, lines 25-45 and 50-56, wherein a linear optimization problem is solved to optimize the promotional plans). However, Cunningham et al. does not expressly disclose that the optimization problem is specifically an integer problem with the linear constraint and the nonlinear constraint.

Walser et al. discloses receiving and analyzing constraints the at least one store (See paragraphs 10, 12, 15, 36, 54, 69, and 73-76, wherein base price and promotional variables are

input into the model, and constraints are utilized to cause the system to adhere to certain pricing strategies). However, Walser et al. does not expressly disclose integer programming or that the constraints include a linear constraint and a non-linear constraint.

Both Cunningham et al. and Walser et al. disclose using constrained optimization to make decisions concerning a store, pricing, and promotions. Cunningham et al. discloses using optimization to find the best promotions based on volume, price, profit, etc. goals. Using integer programming when some variables of the problem need to be integer values is old and well-known in operations research. Cunningham et al. discloses the variable of volume, for example, where the number of products must be an integer value. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use an integer problem in the optimization performed by Cunningham et al. in order to more efficiently select the best promotions at the least cost in a problem involving inputs that have integer values. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation.

Further, as stated above, both Cunningham et al. and Walser et al. discloses using constrained optimization. It is old and well known in operations research that constraints are used to specify restrictions on values of variables and would take the form of linear or non-linear equalities or inequalities in order to best represent the situations that limit the values of variables in the constrained optimization problem. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use linear and non-linear constraints in order to more accurately optimize promotional options by matching offers and events based on accurately represented restrictions occurring at the store.

Claims 16 and 17 recite equivalent limitations to claim 15 and are therefore rejected using the same art and rationale applied above.

As per claims 19, 21, and 23, Cunningham et al. teaches wherein the conditions from the at least one manufacturer include providing at least one of a promotional event and a specific amount of promotion (See column 2, lines 1-5 and 30-45, column 4, lines 60-67, column 6, lines 1-13, and column 10, lines 20-40 and 55-57, which discuss manufacturer conditions, such as role in promotions).

As per claim 20, 22, and 24, Cunningham et al. teaches wherein the conditions from the at least one manufacturer include if a manufacturer is providing goods or products for a competitor (See column 2, lines 1-5 and 30-45, column 4, lines 60-67, column 6, lines 1-13, and column 10, lines 20-40 and 55-57, which discuss manufacturer conditions, such as role in promotions). However, none of Cunningham et al., Walser et al., or LoPresti disclose that the manufacturer conditions include not providing a promotional event for a competitor's product.

Cunningham et al. discloses taking into consideration actions of competitor manufacturers when planning a promotion. When there is no competitor action, it would not be considered and thus not affect the planning of Cunningham et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to consider a manufacturer not providing a promotional event for a competitor's product in the planning of Cunningham et al. in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user by using considering all variables that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation.

As per claims 25-26, Cunningham et al. teaches modeling sales as a function of price to create a sales model, including inputting price and promotional considerations (See column 2, lines 65-column 3, line 3, column 5, lines 13-23, column 6, lines 1-20, column 8, lines 1-10, column 10, lines 55-65, which discusses modeling sales using price and sales information). Further, Cunningham et al. discloses that the price used is an average of non-promoted prices (See column 3, lines 20-50, and column 11, lines 15-27, which disclose using average prices and no promotion data).

However, while Cunningham et al. discloses price and promotional considerations, neither Cunningham et al. nor Walser et al. expressly disclose imputed base price variable and the imputed promotional variable

LoPresti discloses imputing variable values in data sets when data is missing (See page 1, sections 1-2, and page 2, sections 1-2, wherein a data set is utilized for a study and missing data is imputed so the missing data can be replaced). However, LoPresti et al. does not expressly disclose receiving and analyzing constraints from the at least one store wherein the constraints include a linear constraint and a nonlinear constraint.

Cunningham et al. and Walser et al. are combinable for the reasons set forth above. Cunningham et al. discloses using constrained optimization to make decisions concerning a store, pricing, and promotions and interfacing with a user to set goals and constraints and elicit promotional cost information for the system. LoPresti specifically discloses using imputation to fill in missing values in a data set so that the data can be used. It would have been obvious to one of ordinary skill in the art at the time of the invention to use imputation on missing values in order to create a more useful data set for the study. See page 1, section 1, of LoPresti.

As per claim 27, Cunningham et al. teaches a sales model created by an econometric engine (See column 2, lines 65-column 3, line 3, column 5, lines 13-23, column 6, lines 1-20, column 8, lines 1-10, column 10, lines 55-65, which discusses modeling sales using price and sales information). However, Cunningham et al. does not expressly disclose, nor does Walser et al. or Lo Presti, that the sales model created includes Bayesian Shrinkage modeling.

Both Cunningham et al. and Walser et al. disclose using constrained optimization to make decisions concerning a store, pricing, and promotions. Cunningham et al. discloses interfacing with a user to set goals and constraints and elicit promotional cost information for the system. Examiner takes official notice that Bayesian Shrinkage algorithms are old and well known in the art as an efficient way for generating estimates. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Bayesian Shrinkage modeling in the system of Cunningham et al. in order to more efficiently select the best promotions for the store based on quantifiable inputs by the user, such as price, volume, or profit, by using constraints concerning the store that will affect the minimization of cost. See column 5, lines 50-55, of Cunningham et al. which discloses this motivation.

Response to Arguments

9. Applicant's arguments with regards to Cunningham et al. (U.S. 6,029,139) in view of Dulaney et al. have been fully considered, but they are moot in view of the new grounds of rejection set forth above, as necessitated by amendment.

10. Further, did not challenge official notice taken in the previous Office Action by the Examiner that certain subject matter is old and well known in the art. Per MPEP 2144.03(c),

these statements are taken as admitted prior art because no traversal of this statement was made in the subsequent response. Specifically, it has been taken as prior art that:

It is old and well known in operations research that constraints are used to specify restrictions on values of variables and would take the form of linear or non-linear equalities or inequalities in order to best represent the situations that limit the values of variables in the constrained optimization problem.

Using a user interface to more efficiently display output to a user (or client) of a system is old and well known in the computer arts.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Tatum et al. (U.S. 6,591,255) teaches imputing values for missing values.

Chavez et al. (U.S. 6,684,193) teaches a system which imputes (induces or infers) a level of demand for the model.

Jannarone (U.S. 6,289,330) teaches imputing missing feature values.

Lach ("Data Mining Digs In") discloses using SPSS missing value analysis to impute missing values.

Paulin et al. ("Imputing Income in a Consumer Expenditure Survey") discloses imputing missing data collected in a survey.

Chapmen et al. ("A revision and Empirical Test of the extended price perceived quality model") teaches studying the balance of price and promotion and using imputed values.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Beth Van Doren whose telephone number is 571-272-6737. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 571-272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

bvd
October 29, 2007

BETH VAN DOREN
PRIMARY EXAMINER
AU 3623